IRRIGATION IN MADRAS STATE

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Foreword

IRRIGATION schemes are now being investigated and executed, not solely on the basis of direct financial return on the capital outlay, but with due regard also to the need for augmenting supply of food and improving the well-being of the people. This has naturally called for far greater expenditure on irrigation schemes than that incurred under the previous regimes. But the State Government have not been deterred by this and as the following pages will show, have executed very many schemes of benefit to the people of the State. The financial resources of the State are limited and hence the Government have had to lean very much on Central loans for this purpose. Unfortunately, there is another great handicap : the water resources available in our State after the Andhra partition are very limited. There is only one big river, Cauvery, and a few others like the Tambraparni and the Ponniar on which irrigation and power schemes could be based. The possibilities of exploiting these for development of irrigation and power have also been exhausted and the Government are now forced to look to certain other sources, viz., the waters

flowing in basins common to Madras and neighbour States which can be put to a more rational use by inter-State development. One such is the Vaigai Reservoir Scheme in which more of the waters flowing in the Periyar lake (in Travancore territory) is proposed to be diverted to serve the Tamil Nad area. Other similar schemes also appear at present to be possible, and the Government are exploring these possibilities. With the co-operation of the Centre and sister States adjoining Madras, the Government hope to achieve still further successes in the interests of the welfare of the people of this State, so that they may be able as the poet puts it, "to scatter plenty over a smiling land and read their history in a nation's eyes."

Shanmuga Rajeswara Sethupathi

Minister for Works

Irrigation
in
Madras State

The importance of irrigation in a tropical country like India cannot be overemphasized. Here more than 80 per cent of the population live on agriculture and agriculture in its very nature requires water during the different seasons of the year. In the normal climatic conditions of the country this is not however possible, for the rainfall which varies from 6 inches in some parts of Central and Northern India to 600 inches in Chirapunji in Assam is not distributed evenly over the Twelve months of the year. It is confined to four or five months, the rest of the year being generally dry. Hence the necessity to conserve rain water in order that it may be utilized for agriculture during periods when agriculture requires it.

The Madras State has been noted for many irrigation works from early times. During the Hindu period the Cholas specially distinguished themselves by building irrigation works which converted many dry areas into green fields. Besides, wealthy people also contributed by excavating canals or tanks as an expression of their philanthrophy. During the British period, despite the orthodox irrigation policy pursued, the State witnessed great strides in the matter of expanding irrigation facilities.

The chief irrigation systems in Madras State at the close of the British period were (1) The Cauvery Delta system, (2) The Lower Coleroon Anicut System, (3) The Ponniar River System, (4) The Thambarabharani River System, (5) The Periyar System, (6) The Palar Anicut System, (7) The Cheyyar Anicut System, (8) The Poiney Anicut System, (9) Wellingdon Reservoir, (10) Pelandorai Anicut System and (11) Shatiatope Anicut System.

A brief description of these systems will serve as proper background against which the more rapid development in irrigation during the post-independence era can be assessed in its proper perspective.

1. *The Cauvery Delta system.*—The river Cauvery rises in the Western Ghats near Mercara in Coorg at an elevation of 4,400 feet above sea level, and after a course of nearly 500 miles, enters the Bay of Bengal draining an area of 31,000 square miles en route. The Western Ghats are subject to very heavy rainfall of more than 100 inches during the South-west monsoon and the highest run-off usually occurs in July or early in August. In the middle reaches, the river drains the Mysore Plateau which is subject to fluctuating rains during the months of August to October. The important tributaries, which join the Cauvery in this reach, are the Hemavathi, the Lakshmanathirtha and the Kabbini also taking-off in the Western Ghats. There is an important waterfall near Sivasamudram in Mysore State where power is being generated. After leaving the Mysore plateau the Cauvery winds its way through hilly country and at Mettur in Salem district, just before the river enters the plains, a masonry dam has been constructed (1928–34) connecting 2 hillocks on either side. The dam is 5,300 feet long, the maximum height being 214 feet. The capacity of the reservoir is 93,500 million cubic feet. The reservoir is intended to even out the flood flows into the river, by storing the flows over the requirements of the delta and releasing them when required. The reservoir is also intended to bring under irrigation a new area of about 3·0 lakhs acres. The total area under the old delta and new area is about 15 lakhs acres. Besides irrigation, power is also being generated here, the installed capacity being 40,000 K.W.

The head of Cauvery delta is at the upper anicut 10 miles west of Tiruchirappalli. Here the river gives

off a branch on the northern side known as Coleroon and the southern one retains the name of Cauvery. A regulator spans the Coleroon at the Upper Anicut. The Coleroon is really the flood carrier while the Cauvery is utilized for supplying the irrigation requirements of the delta. The Cauvery and the Coleroon meet again some 20 miles below, forming anisl and between them. The Grand Anicut, the key to the Cauvery delta, which is known as the "Granary of South India" is built here on the left bank of the Cauvery. The scouring sluices of this anicut discharge the surplus waters of the Cauvery into the Coleroon. Just below this anicut the Cauvery bifurcates into two main (irrigation) rivers, namely, the Cauvery and the Vennar, at the heads of each of which, a regulator has been built.

Another canal was excavated about 20 years ago under the Cauvery-Mettur Project from the Grand Anicut on the southernmost side and is known as Grand Anicut canal. The Cauvery and the Vennar divide and sub-divide into innumerable distributaries and together provide the means of irrigation for about three-fourths of the area of the Tanjore district. The south-western portion of the district is the new area served by the Mettur Project, partly by the Grand Anicut canal and partly by the extension of the already existing Vadavar System.

Irrigation in the Cauvery delta dates back to the Chola period. Many old works, still extant, show that irrigation under some of the old Indian Rulers received considerable attention. The system was, however, more an 'inundation system' than a controlled irrigation system and must have on this score, been defective from the very first. For a century before the advent of the British rule these works had been badly neglected on account of internal wars and political intrigues and in 1801, when the East India Company took over the Tanjore district, irrigation in the delta was rapidly deteriorating, the channels were silting up and fields were left uncultivated for want of proper water-supply.

To re-establish satisfactory irrigation conditions was one of the first problems for the British Government. In 1836 Sir Arthur Cotton built the Upper

Anicut across the Coleroon to divert more water into the Cauvery. To make up for the consequent diminution in supply to the Lower Coleroon irrigation, the Lower Anicut (70 miles below the Grand Anicut) was also built across the Coleroon. But the supply in the Cauvery during floods now became too great to be controlled and began to cause serious damage to the bed and banks of the Cauvery. To check this tendency, a grade wall called the Cauvery Dam was built in 1845 across the Cauvery at the Upper Anicut. Further improvements followed, the most important of these being the construction of the regulators across the Cauvery and the Vennar at the Grand Anicut, the cutting down of the crests of the Upper and Lower Anicuts, the provision of lift shutters at those anicuts capable of holding up 2 feet extra supply for the benefit of irrigation and the construction of regulators across the various rivers at the sites of all the important off-takes in the delta.

A new canal, the Grand Anicut Canal, taking off at the Grand Anicut has also been excavated under the Mettur Project to supply ultimately an extent of 271,000 acres of new irrigation and the improved and extended 'Vadavar' will supply another 30,000 acres of new area. The area so far developed under the two canals is about 2·5 lakhs of acres.

2. *Lower Coleroon anicut system.*—The river Coleroon branches off from the Cauvery at Upper anicut near Elamanur on the Trichi-Erode Railway line. This river is mostly a flood carrier and is more than half a mile wide in many places. It touches the Cauvery again about 20 miles lower down at the Grand Anicut. At this place too, the excess water in the Cauvery is diverted into the Coleroon. About 125 miles below the Grand Anicut the river enters the Bay of Bengal near Chidambaram.

Irrigation in South Arcot and Tanjore districts was carried on through some ancient channels from the Coleroon. In 1840, Sir Arthur Cotton built an anicut across the Coleroon about 75 miles lower down the Grant Anicut. At this place there is a small island in the river and regulators have been built across both the arms. Two channels take off on either side of the river, Kumikimaniar and South Rajan channels on the right irrigating small extents in Tanjore district, while Vadavar and North Rajan

on the left irrigate appreciable areas in South Arcot district. The Vadavar supplies the big Veeranam tank.

The extent under irrigation is about 1·2 lakhs of acres.

3. *Ponniar river system.*—This river also known as South Pennar, has its source in Mysore State and rises in the southern slopes, of the same range of hills as North Pennar and flows south up to the Madras border, where it changes its course towards the east, and joins the sea after a last run through the South Arcot district. The river is about 260 miles long and drains an area of about 4,800 square miles. There is an anicut across the river in Nedungal village in Salem district and from there a supply channel takes off on the left for filling a big tank called Barur tank; this tank together with the channel, irrigates about 4,500 acres. About 80 miles lower down is another anicut across the river at Tirukovilur in South Arcot district, the area irrigated under which being about 27,000 acres. In addition, many channels take off along the course of the river and irrigate appreciable extents.

In the First Five-Year Plan, 2 projects (1) Krishnagiri Project in Salem district, and (2) Sathanur Project in North Arcot district have been sanctioned and separate notes about them are appended at the end.

4. *Tambraparni river system.*—The Tambraparni river has its source in the range of hills dividing Travancore from the southernmost district of the Madras State, i.e., Tirunelveli district. This is the main source of irrigation for the district. It has several tributaries, the chief among them being Servalar, Manimuthar and Chittar. After a course of nearly 75 miles in Tirunelveli district, the Tambraparni enters the Bay of Bengal near Kayalpatnam. Along its course are 8 anicuts, of which channels take off and irrigate large areas.

The several anicuts are—(1) Kodamel–Alagian Anicut, (2) Nathyunni Anicut, (3) Kanandian Anicut, (4) Ariyanayagapuram Anicut, (5) Palavur Anicut, (6) Suthamalli Anicut, (7) Marudur Anicut and (8) Srivaikuntam Anicut. The last two anicut systems irrigate about 25,000 acres each while the channels from the other anicuts irrigate about 37,000 acres.

At the last anicut, 60 miles from its source, the drainage area is about 1,740 square miles.

A dam about 170 feet high has been constructed at Papanasam within a few miles of the source and the storage in the lake formed thereby is utilized primarily for power generation. The Papanasam dam also serves in regulating irrigation supplies at times of short supplies. Another Project across a tributary of Tambraparni known as the Manimuthar Project is now in progress; the details of which are separately given.

5. *Periyar system.*—The Periyar river has its source in the dividing range of hills between Travancore and Madras and flows mostly in Travancore-Cochin State emptying ultimately into the Arabian Sea. Originally, most of the waters were going to waste and the idea of utilizing a portion of them in Madras had engaged the attention of Engineers for a long time in the latter half of the last century. In 1886, definite proposals for the diversion of the Periyar waters into the Madras Territory took shape. The proposals were for the construction of a gravity non-overflow dam 170 feet high across the Periyar with a regulator adjoining the dam to pass the surplus and a tunnel 5,700 feet long through the dividing range of hills to take the water from the Periyar valley into the neighbouring Suruliyar valley on the Madras side. (This river Suruliyar falls into the Vaigai.) The work was started in 1887 and completed by 1897. A big lake of 9,800 m.c.ft. effective capacity was thus formed.

At Peranai, about 80 miles downstream of the tunnel in Madurai district, a regulator was constructed across the river Vaigai and the main Periyar system of irrigation begins here. The main canal takes off at the left flank of the regulator and has numerous branches which irrigate vast areas supplemented by a large number of tanks. The total extent of irrigation is about 1·35 lakhs of acres.

To make use of a greater part of the Periyar waters, now going to waste to the Arabian Sea, a new Project called the Vaigai Reservoir Project has been sanctioned recently and is under execution; the details of this are furnished lower down.

6. *Palar anicut system.*—The River Palar has its source near Chintamani in Kolar district of the Mysore

State. It has a length of nearly 202 miles and enters the Bay of Bengal near Madras draining an area of 3,974 square miles. It has several tributaries, the chief among them being (1) Kavundinyanadi, (2) Poiney and (3) Cheyyar. The river is not a perennial one and floods are very rare and of short duration. Generally there is no flow in the river for most of the year.

There is an anicut across the river 4½ miles below the town of Arcot at the 152nd mile from the head of the river. There are four head sluices, namely, Mahendravadi and Kaveripauk head sluices on the left and Sakkaramallur and Dusi head sluices on the right banks. As the flows in the river are of short duration, the head sluices and channels taking off from them have been designed liberally to abstract large inflows, to feed a chain of tanks, 316 in number. The total ayacut served under the system is 76,145 acres both in North Arcot and Chingleput districts.

7. *Cheyyar anicut.*—The river Cheyyar takes its sources from Javadi hills in Chengam taluk and joins the Palar river on the right side. The total catchment area is 711 square miles above the anicut, of which 257 square miles are in hills.

The Cheyyar anicut across the river is situated at about the 50th mile from its source and is about ten miles east of Arni. This is the sixth anicut across the river. The first five anicuts are small ones supplying water for a few tanks and the ayacut served by them is 3,368 acres. They are (1) Chengam anicut, (2) Kottakolam anicut, (3) Eraiyur anicut, (4) Alathoor anicut and (5) The Upper Cheyyar anicut.

The main channel taking off from the right side of Cheyyar anicut is designed to fill up several tanks. The number of tanks fed by the system is 144 of which 40 are fed directly by the channel and the other from tank to tank. The total area irrigable under the system is about 20,000 acres.

8. *Poiney anicut system.*—The river Poiney (also known as Ponnai river), a tributary of Palar river, takes its origin from Seshachalam hills in Chandragiri taluk of Chittoor district and joins the Palar river on the left near Karai village in Wallajah taluk after flowing a distance of about 52 miles.

The anicut is located about 12 miles above its confluence with Palar and about 2½ miles south of Poiney

village and lies both in Madras and Andhra States. The catchment area of the river at the site of the anicut is 666 square miles.

There are two main channels taking off the anicut, viz., (1) eastern main channel and (2) western main channel. The eastern main channel and its branches feed 111 tanks and the ayacut served is 18,600 acres. The whole channel is situated in Madras State. The western main channel and its branches feed 18 tanks and serve an ayacut of 2,827 acres. This channel runs partly in Andhra State and partly in Madras State.

9. *Willingdon Reservoir.*—The river Vellar, one of the principal rivers in South Arcot district, carries between steep banks the drainage from Shevaroy hills, the Kalrayan hills and the Kollimalai hills of the Salem district.

There is a bridge and regulator fitted with lift shutters across the river at Toludur and it carried the Great Southern Trunk road from Madras to Tiruchirappalli. A canal, three and a half miles long, takes off from this regulator and feeds the Willingdon reservoir which has a capacity of 2,592 m.c.ft. The reservoir has a bund of 2 miles 4 furlongs 300 ft. long with one surplus sluice and head sluice. The top width of the bund is ten feet and the tank bund level is ten feet above F.R.L.

The main channel takes off from the reservoir and branches into the high and low level channels a short distance below the head. The Project at present irrigaters about 25,000 acres.

10. *Pelandorai anicut system.*—The next anicut in Vellar river below Toludur regulator is at Pelandorai about 20 miles lower down. It serves the area between the Vellar and the southern boundary of the South Arcot district.

The anicut is 500 feet long with a head sluice of five vents of six feet each on the right bank. A supply channel 15 miles long takes off the head sluice and irrigates 16,729 acres in 48 villages.

11. *Shatiatope anicut system.*—The third and the last anicut in Vellar is at Shatiatope, 22 miles below Pelandorai. This anicut was later converted into a bridge and regulator with lift shutters.

The supply for the system is being taken through Vellar Rajan head sluice on the left margin of Vellar above Shatiatope anicut. The channel feeds two big tanks, Wallajah and Perumal tanks. The System irrigates about 34,000 acres.

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The above is a general picture of the position of irrigation works in Madras State before the dawn of Independence. The pace of progress has been accelerated rapidly since then. The conservative irrigation policy of the British Government stood in the way of any rapid progress and expenditure of irrigation projects was considered unremunerative if they could not yield quick returns. Only few cases survived this test. This 'commercial' view regarding irrigation development had necessarily to be modified after the country became politically and economically free. The goal of a welfare State also demanded a revision of this Policy. The Government therefore laid down that irrespective of the question of return on the financial investment on irrigation works all projects that are necessary in the interests of the welfare of the country should be taken up. As a result, during the period from 1947 up to now, the Government have launched a number of important irrigation projects, both big and small, which, when completed, would considerably augment the food resources of the State.

In addition to Projects a large number of comparatively small works have been done under the Grow More Food and intensive cultivation or Special Minor Irrigation programme, throughout the State. There was an intense drive for the early completion of these works on account of the acute scarcity and shortage of foodstuffs involving rationing on an unprecedented scale. The composite State of Madras had a total area of 81·4 million acres with a population, according to the census of 1951, of nearly 57 millions. Thirty-three million acres were sown with crops and of these 9·4 million acres were irrigated from rivers, canals, tanks and wells. The total area of the present Madras State is about 38·6 million acres and the area irrigated is roughly 4·8 million acres. This area will increase considerably after all the irrigation works now under execution have been completed.

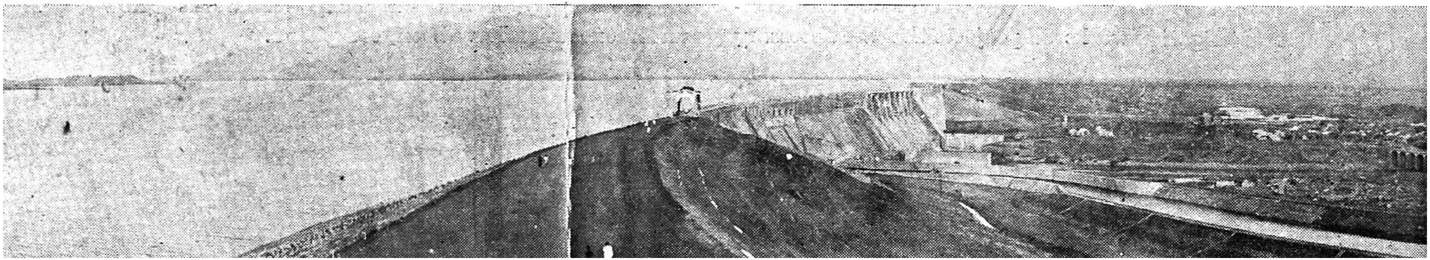
Among the new irrigation projects in Madras, the most notable are : (1) The Lower Bhavani Project, (2) The Malampuzha Project and (3) The Manimuthar Project. The other projects under execution or consideration are : (1) Mettur Canal Scheme, (2) Amaravathi Project, (3) Vaigai Reservoir Project, (4) Sathanur Project, (5) Krishnagiri Reservoir Project, (6) Araniar Project, (7) Walayar Reservoir Project and (8) Mangalam Reservoir Scheme.

Brief details about all these projects are furnished below :—

1. *The Lower Bhavani Project.*—The project will harness the waters of the river Bhavani in its lower reaches. The Bhavani is a tributary of the Cauvery and has a major portion of its course in the Coimbatore district. It drains a catchment of 2,376 square miles. The Bhavani river which comes under the influence of both the south-west and north-east monsoons carried ordinarily heavy freshes, of the order of 50,000 cusecs and more. These freshes last only for a few days. At other times, the flow is barely sufficient for the existing irrigation of 39,000 acres, which had been developed under the two ancient anicuts on the river. The necessity for conserving the freshes for utilization at the proper time was therefore keenly felt and the Lower Bhavani Project was designed towards that end.

The projects consists in the construction of a dam across the river about ten miles upstream of Satyamangalam. The dam is 28,862 feet long. The main canal taking off on the right side is about 124 miles long and it will irrigate a new area of 207,000 acres.

THE BHAVANI DAM : Lake in front and the spillway, etc., are seen



The project was sanctioned in 1947 and it will be completed in March 1955 at a cost of nearly Rs. 10 crores. Work on this reservoir has been completed except for providing crest gates. In the canal, the main canal has been completed as also a major portion of distributaries.

In 1953–54, a new area of 30,000 acres was thrown upon for irrigation. In the current year (1954–55), an area of 115,000 acres has been thrown open for irrigation.

2. *The Malampuzha Project.*—The Project is for the construction of a dam across the Malampuzha river, a tributary of Bharatapuzha, about 5 miles from Olavakode in Palghat taluk of Malabar district. The dam will be 6,066 feet long made up of five sections. The maximum height of the dam above the foundations will be 125 feet and the reservoir has a capacity of 8,000 m.c.ft. The catchment of the river at the site is 57 square miles. The left bank canal will be 20 miles long and it is expected to stabilize the irrigation over 40,000 acres. The project is expected to produce 10,000 additional tons of rice.

The project was sanctioned in 1949 and it will be completed in 1956 at a cost of nearly 4·4 crores. An extent of over 6,000 acres was thrown open for irrigation in 1953–54 while about 3 times this area is taken up for irrigation in 1954–55.

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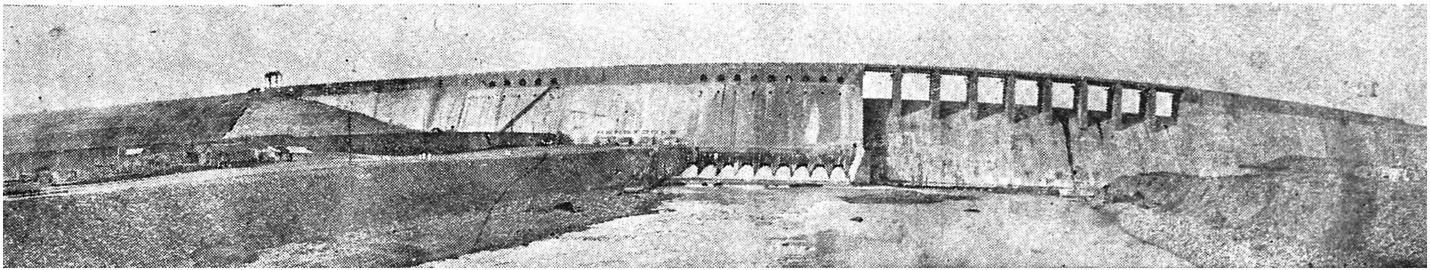
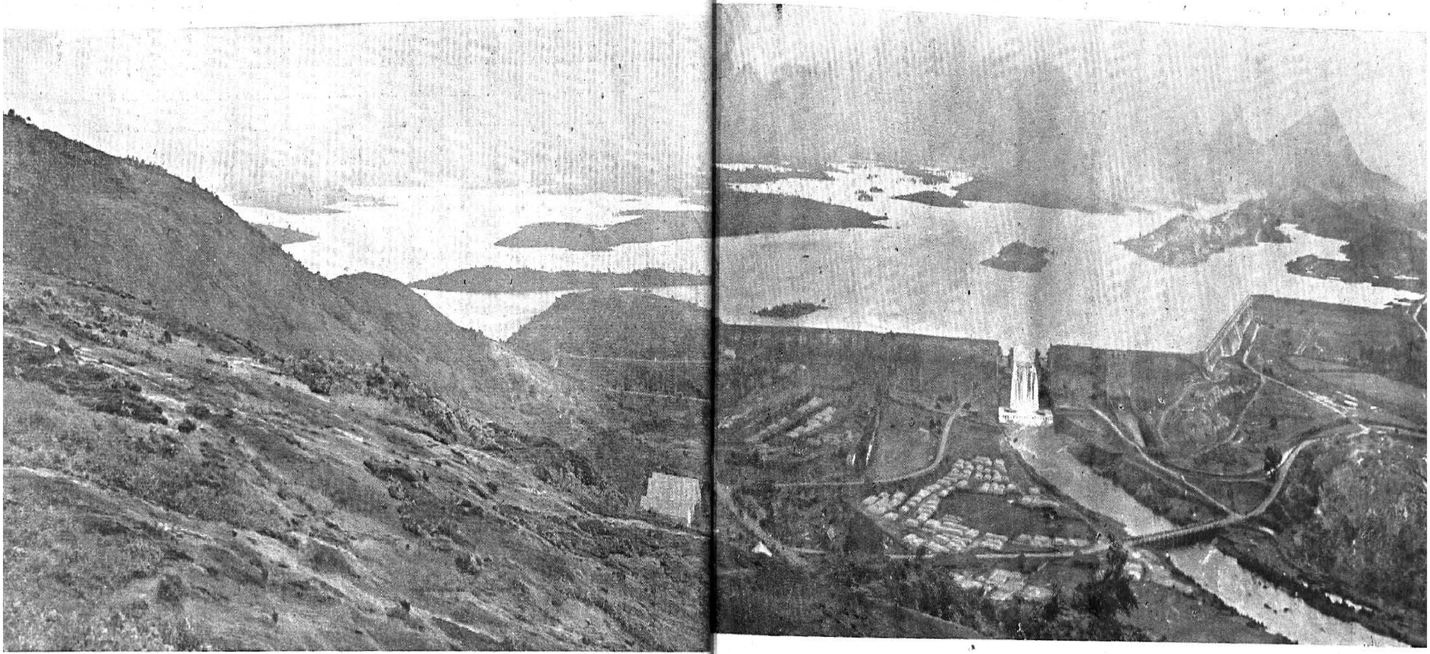
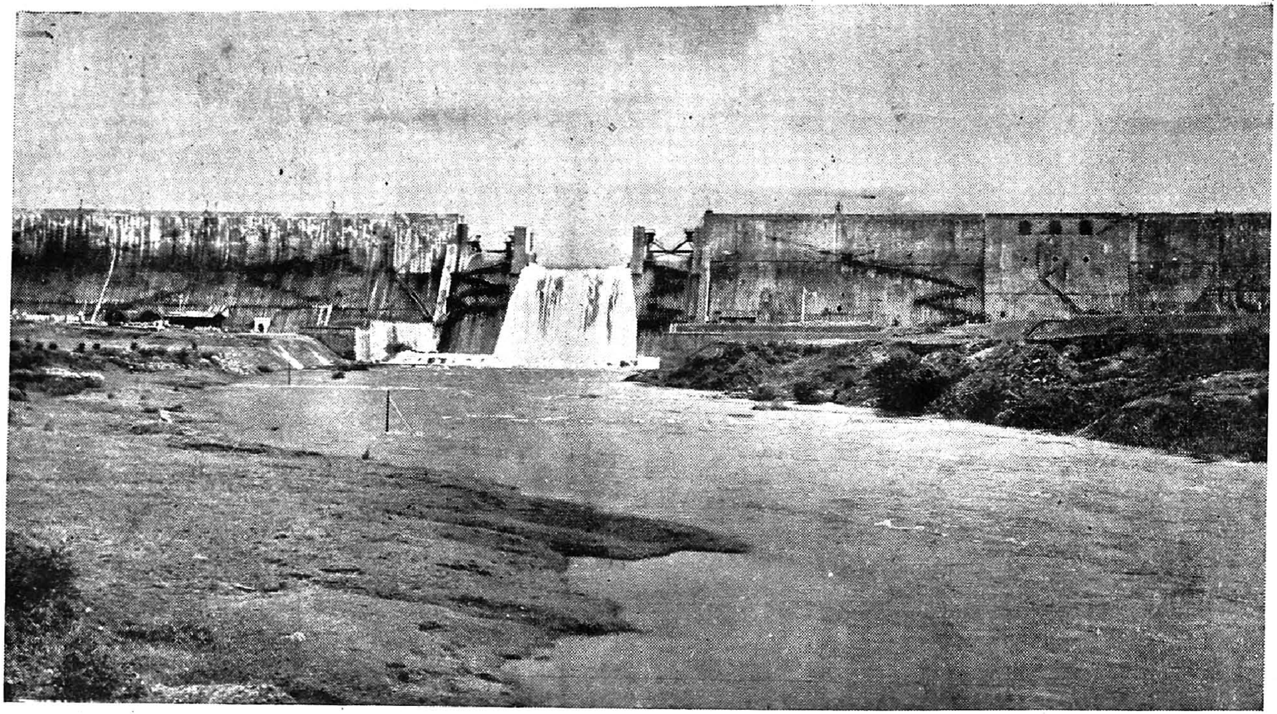


LOWER BHAVANI PROJECT : A rear view of the dam as on 4th October 1953



MALAMPUZHA PROJECT: View of reservoir from water-works hill



MALAMPUZHA PROJECT, MALABAR : View of dam and spillway from Bridge below dam

3. *Manimuthar Project.*—This project is for the construction of a reservoir across the Manimuthar river, a tributary of the Tambraparni river in Tirunelveli district. The site of the reservoir is about four miles south-west of Kallidaikurichi in Ambasamudram taluk. The catchment area of the river at the site of the reservoir is 62·4 square miles. The average annual flow is about 11,000 m.c.ft. The total length of the dam is about 9,270 feet. The height of the dam above the deepest foundation level will be about 150 feet. The reservoir will store 4,000 m.c.ft. initially and 5,500 m.c.ft. when the shutters are fitted on the crest of the spillway dam later. The waterspread of the reservoir is about 91 square miles. On the right side a new canal 28 miles long is being excavated, which will feed a large number of rain-fed tanks in the taluks of Ambasamudram, Tirunelveli, Nanguneri, Tiruchendur and Srivaikuntam and would irrigate through them about 20,000 acres of tank ayacut. It will also provide assistance to 83,000 acres of existing irrigation under the Tambraparni system. An extra quantity of 20,000 tons of rice is expected to be achieved by the project. The cost of the project is likely to be about Rs. 5 crores.

4. *Mettur Canals Scheme.*—The proposal is to take a canal from the Mettur Reservoir for irrigating 45,000 acres in Coimbatore and Salem districts. The Main canal at its fourth mile branches off into two, the East Bank Canal being about 39 miles of length and the West Bank Canal of about 26 miles. The East Bank Canal will irrigate about 27,000 acres in Salem district while the West Bank Canal will serve an area of 18,000 acres in Salem and Coimbatore districts. The scheme was sanctioned in 1949 for Rs. 266·85 lakhs.

The excavation of the West Bank Canal is over and most of the masonry works connected therewith have been completed.

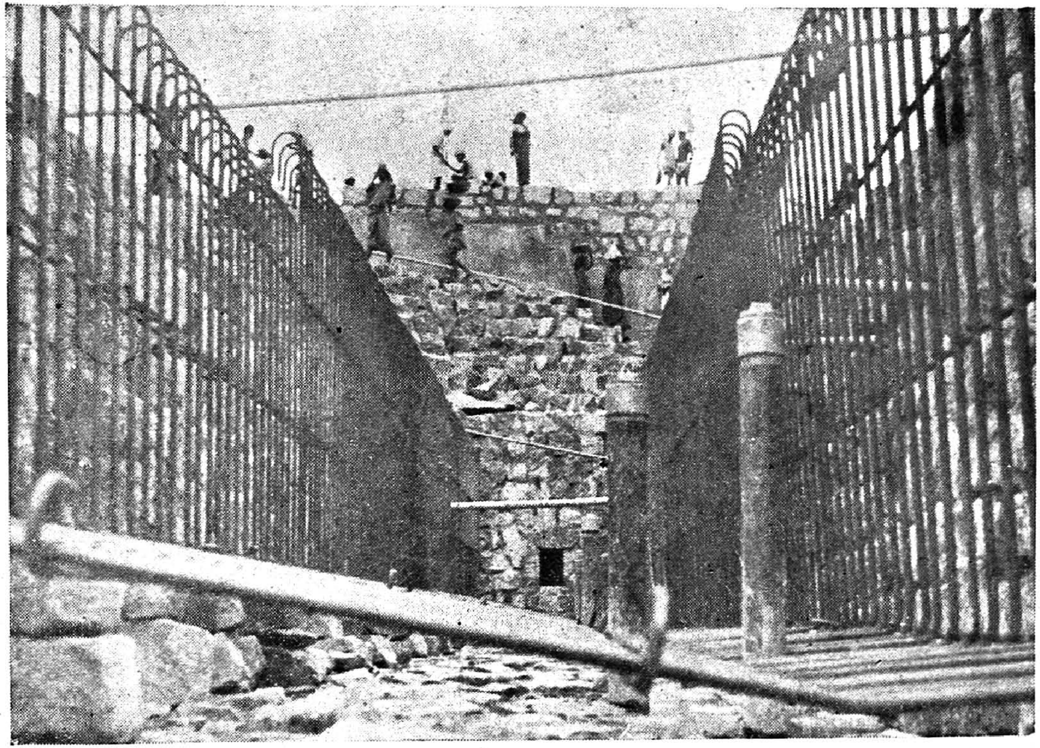
The excavation for East Bank Canal is in full swing.

Water has been let down in the West Bank Canal from 1st August 1954 for irrigation up to mile 19/2 for short-term food crop on about 7,200 acres.

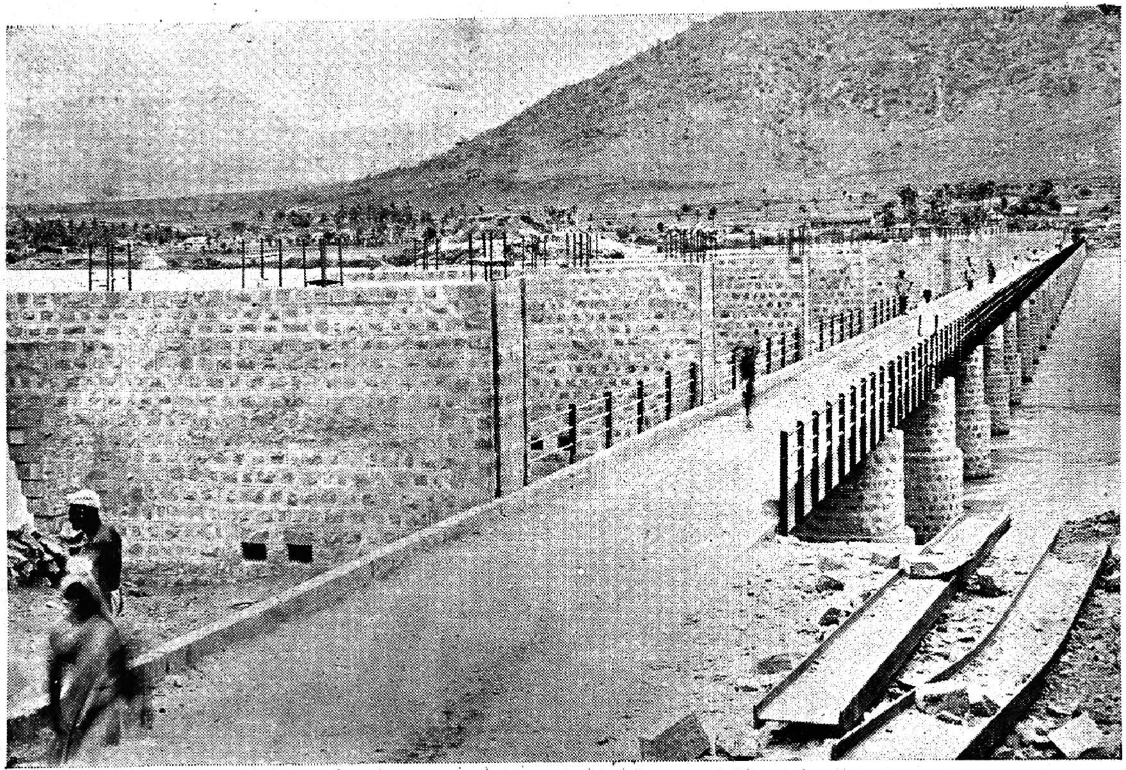
The scheme is likely to be completed in 1956.

5. *Amaravathi Project.*—The Dharapuram and Udamalpet taluks of Coimbatore district have been

MANIMUTHAR : Rear view of 5th, 6th and 7th blocks and spillway bucket



MANIMUTHAR PROJECT : Reinforcement for drainage gallery in Block No. 14



METTUR CANALS SCHEME—CAUVERY PRESSURE AQUEDUCT, EAST BANK CANAL : Downstream view of the piers

frequently ravaged by famine as a result of the continuous failure of monsoons. In the past the Government have met the terrors of famine by starting relief works and on this account not less than Rs. 20 lakhs were spent in 1939. The Government therefore decided to plan an irrigation project in this area and the Amaravathi project was inaugurated in December 1953.

The river Amaravathi, which rises in the Western Ghats, is a major tributary of the Cauvery. There are 17 anicuts in the river and 25 irrigation channels irrigating about 33,000 acres of different classes of land.

The project consists of a storage reservoir across the river near the foot of the Western Ghats. The river drains an area of 324 square miles at the site. The dam will be about 3,715 feet long. The storage capacity of the reservoir will be 3,600 m.c.ft. and there will be sluices in the dam both for old and new irrigation.

The project is expected to irrigate 15,000 acres of land besides stabilising 32,000 acres existing. Its total cost will be of the order of Rs. 297 lakhs. The additional food production expected is 5,400 tons of rice and 2,200 tons of millets.

6. *Vaigai Reservoir Project.*—The scheme is to divert a greater part of the surplus waters of the Periyar which now find their way into the Arabian Sea. This is proposed to be achieved by depleting the Periyar lake levels in advance of the monsoon flows. The water which will be drawn through the Periyar tunnel, will after developing power be passed into the Vaigai river through Suruliyar. Across the Vaigai and about 20 miles above Peranai regulator, a dam will be built to store the waters diverted from Periyar.

The catchment area of the river at the site of the dam is 870 square miles. The dam will be a combined earth and masonry dam made up of a length of 1,520 feet of masonry dam and flanking earth dams 1,550 feet on the left and 8,520 feet on the right. Its maximum height will be about 102 feet above the river bed. The reservoir will have a capacity of 6,800 m.c.ft. Its total cost will be Rs. 310 lakhs.

The surplus of Periyar river brought down and stored in the Vaigai reservoir will be utilised to irrigate

20,000 acres of new area in Madurai and Ramanathapuram districts.

The work on this project has been recently started. The work on the power generation side, which was pending an agreement with the Travancore-Cochin State, is likely to be taken up shortly.

7. *Sathanur Project.*—This is in North Arcot district. This district cannot boast so far of any irrigation schemes of appreciable magnitude in spite of the fact that three major rivers flow through it. The present project consists of a storage reservoir across the river Ponniar about 4½ miles from Sathanur village and 22 miles from Tiruvannamalai. The river drains an area of 4,180 square miles at the site. The dam will be about 3,125 feet long and the storage capacity will be 4,600 m.c.ft. with facility to increase it to 5,800 and 8,100 m.c.ft. later. The length of the canal will be 22 miles.

It will bring to irrigation an extent of 16,700 acres of new land and also assure supplies of 3,300 of existing wet lands (15,300 in North Arcot and 4,700 in South Arcot district) besides benefiting the existing ayacuts below the reservoir. The total cost of the project is estimated at Rs. 263 lakhs.

8. *Krishnagiri Reservoir Project.*—The proposal is to form a reservoir across the Ponniar in Krishnagiri taluk (Salem district) at a site about 2 miles west of mile 163/4 of the Madras-Calicut Trunk Road in the village limits of Periamuthur. The capacity of the reservoir will be 2,410 m.c.ft. The total length of the dam will be 3,623 feet.

Irrigation will be carried on by two canals one on either flank. The total irrigation will be 7,500 acres comprising of 2,460 acres existing wet and 5,040 acres dry.

The cost of the project is expected to be Rs. 184·03 lakhs including direct and indirect charges.

It is expected that the project will be completed in about three and a half years.

9. *Araniar Project.*—The Araniar Project comprises of (1) A reservoir across the Araniar river near Pisattur village, Trivellore taluk, Chingleput district, with a capacity about 1,860 m.c.ft., (2) excavation of the irrigation channels from the reservoir on either

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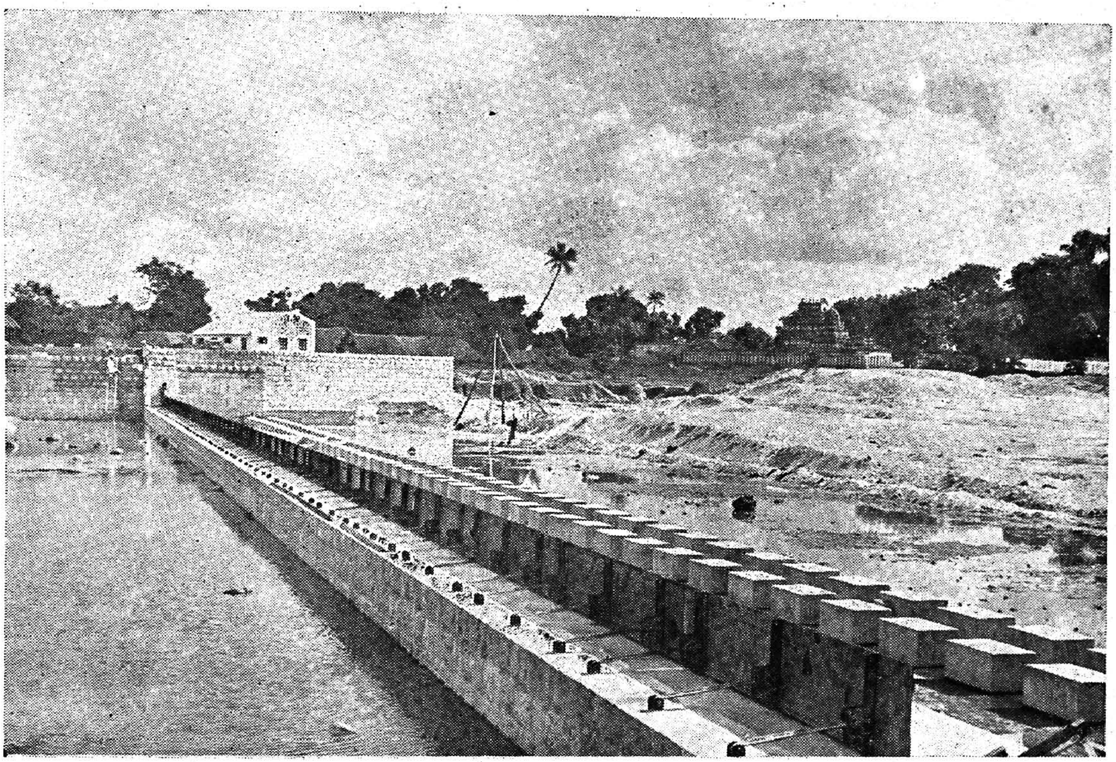

ARANIAR PROJECT : Front view of the Suratapalli Anicut with falling shutters fixed

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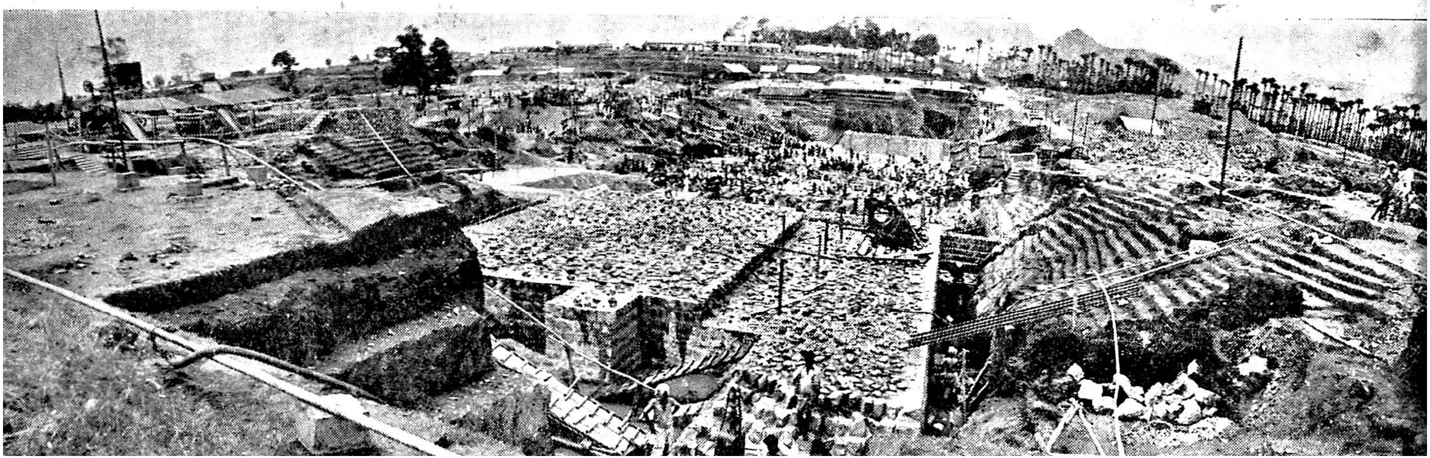
side, (3) construction of pick-up anicut on the river about 11 miles downstream of the reservoir (in Suratapalli village) with a channel taking off on the left side of the anicut to feed a number of existing tanks having precarious supplies now. The project is expected to irrigate a new area of 2,530 acres and stabilise supplies to 2,970 acres by the reservoir channels and supplement supplies to 5,700 acres by the anicut channel, all in Chingleput district.

The estimated cost of the project is Rs. 95·78 lakhs and Rs. 104·19 lakhs including direct and indirect charges.

The project is expected to add 5,000 tons of rice annually to the food resources of Chingleput district.

The project was taken up for execution in 1951 and is likely to be completed by 1956.

10. *Walayar Project.*—The Walayar scheme in Palghat taluk of Malabar district contemplates assurance of better irrigation facilities to 6,500 acres which are now entirely dependent on rains. Not only will double crop be grown on the whole 6,500 acres but in favourable years a third crop on about 1,000 acres will also be possible. Malabar district is deficient in

WALAYAR PROJECT : Masonry on left flank inclusive of core wall and horns left in masonry for bunding between masonry and earth dam.